

JAN 03 2007

Customer No. 27061
Confirmation No. 5602

Patent
Attorney Docket No. GEMS8081.218

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Polzin, Jason A.
Serial No. : 10/711,603
Filed : September 28, 2004
For : METHOD AND SYSTEM OF ENHANCING PHASE
SUPPRESSION FOR PHASE-CONTRAST MR IMAGING
Group Art No. : 2859
Examiner : Louis M. Arana

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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Date: January 3, 2007.

/Robyn L. Templin/
Signature

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**PETITION UNDER 37 C.F.R. §1.144 SEEKING
SUPERVISORY REVIEW OF RESTRICTION REQUIREMENT**

Dear Sir:

Responsive to the Ex parte Quayle Action mailed November 3, 2006, Applicant requests Supervisory Review and consideration of the following remarks in support of the rejoinder of claims 14-38 with claims 1-13.

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JAN 03 2007 S/N: 10/711,603**REMARKS**

Claims 1-38 are pending in the present application. The Examiner withdrew claims 14-38. Claims 1-13 were allowed.

In a first Restriction Requirement issued February 6, 2006, the Examiner identified three alleged "species" in the pending application. After a proper election with traverse mailed March 8, 2006, Applicant twice sought Supervisory Review of the Restriction, in a first Petition mailed June 5, 2006, and a second Petition mailed September 11, 2006 (copies enclosed). However, in each case the Examiner has pulled the Petition and unilaterally issued yet a new Restriction and twice has attempted to use an Ex parte Quayle Action in an attempt to unfairly force Applicant to cancel claims without proper review. The Examiner is circumventing the Petition process and not following proper Restriction practice. Now, in an Ex parte Quayle Action mailed November 3, 2006, the Examiner vacated the previous Restriction Requirement and issued yet another Restriction under 35 U.S.C. 121, alleged that the inventions are distinct, and issued a restriction to:

I. Claims 1-13, drawn to a system for determining the phase of stationary and flowing spins in a MRI image, classified in class 324, subclass 306

II. Claims 14-38, drawn to a method of phase correction in flow analysis MR imaging, classified in class 600, subclass 419.

Because of the history regarding restriction of this application, and Applicant's belief that the new Restriction is likewise wholly inappropriate, issuance of an Ex parte Quayle Action is clearly improper.

In issuing the new Restriction, the Examiner cited MPEP § 806.05(e) and stated that "the apparatus [of invention I] can be used to practice a materially different process such as, when the phase of moving and stationary spins is determined with other than the calculation of a power spectrum or pulsatility factor." *Ex parte Quayle Action, Nov. 3, 2006, Pgs. 2-3*. However, MPEP § 806.05(e) also places the burden on the Examiner to "provide reasonable examples that recite material differences." *MPEP § 806.05(e), Examiner Note*. The Examiner has not met the burden with regard to MPEP § 806.05(e), but merely attempted to use the claim language, and stated that the phase and moving stationary spins can be determined with other than the calculation of a power spectrum or pulsatility factor, yet provided no concrete examples outside the existing claim language.

In fact, the apparatus of alleged invention I is actually generic to that which the Examiner has identified as invention II. MPEP § 806.04 states:

"[w]here an application includes claims directed to different embodiments or species that could fall within the scope of a generic claim, restriction between the species may be

Polzin, Jason A.

S/N: 10/711,603

proper if the species are independent or distinct. However, 37 CFR 1.141 provides that an allowable generic claim may link a reasonable number of species embraced thereby. The practice is set forth in 37 CFR 1.146. *MPEP § 806.04 (emphasis added)*.

That called for in claims 14-38 is not "independent or distinct" from claim 1.

Claim 1 calls for, in part, a MRI system and a computer programmed to generate phase-difference images from a first acquisition and a second acquisition, determine a non-zero background phase from the phase-difference images that are due to eddy currents induced by flow encoding gradients used to generate the phase-difference images, remove the non-zero background phase from the phase-difference images, and determine phase associated with flowing spins and phase associated with stationary spins.

Independent claim 14 calls for a method of phase change correction in flow analysis MR imaging comprising the steps of determining temporal frequency components for a given pixel of a phase-difference image, generating a power spectrum of the given pixel from the temporal frequency components, determining percentage of the power spectrum within a given energy range, and including the pixel in a mask image if a given percentage of the power spectrum for the pixel is at a given energy.

Independent claim 28 calls for a computer readable storage medium having a computer program stored thereon and representing a set of instructions that when executed by a computer causes the computer to, (A) determine a pulsatility factor for each pixel of a slice of a phase-difference image, (B) generate a mask image of the slice from only those pixels having a given pulsatility factor, (C) apply the mask image to the phase-difference image for the slice to mask the phase-difference image along the slice, (D) repeat (A)-(C) for each slice of the phase-difference image, and (E) output a corrected phase-difference image with substantial subtraction of background phase.

The embodiments called for in claims 14 and 28 are not "independent and distinct" from that which is called for in claim 1 as the Examiner alleges. Generic claim 1 is broad and encompasses the scope of the material as called for in claims 14 and 28. Such is evident by that called for in some of the dependent claims of claim 1.

Claims 3 and 4, which depend from claim 1, call for calculation of a degree of pulsatility similar to that called for in claim 28. In claims 3 and 4 the computer is further programmed to, in part, determine the degree of pulsatility (claim 3) and exclude the object in the background image if the degree of pulsatility exceeds the pulsatility threshold (claim 4).

Claims 5-7, which depend from claim 1, call for calculation of a power spectrum similar to that called for in claim 14. In claims 5-7 the computer is further programmed to generate a mask from those objects not pulsating at a temporal frequency above a frequency threshold (claim 5), wherein the frequency threshold is 0 Hertz (claim 6), and wherein a temporal frequency power spectrum is generated on a per pixel basis (claim 7).

Polzin, Jason A.

S/N: 10/711,603

Clearly the scope of material as called for in claims 14-38 falls within the purview of that called for in independent claim 1, thus making claim 1 generic to claims 14-38. Claim 1 is broad to the extent that it is properly narrowed by claims 3 and 4 by determining a degree of pulsatility. Claim 1 is broad to the extent that it is properly narrowed by claims 5-7 by determining a temporal frequency power spectrum on a per pixel basis. Accordingly, claims 14-38 are directed to "embodiments or species that could fall within the scope of a generic claim" and are not "independent and distinct" therefrom. According to MPEP § 806.04(d), "[o]nce a **>generic claim is allowable<**, all of the claims drawn to species in addition to the elected species which **>require<** all the limitations of the generic claim will ordinarily be *** allowable >**over the prior art< in view of the **>allowability<** of the generic claim, since the additional species will depend thereon or otherwise **>require<** all of the limitations thereof." MPEP § 806.04(d). As such, because Applicant believes claim 1 is allowed and believed generic to the scope of material called for in claims 14-38, Applicant thereby requests rejoinder of claims 14-38 with claims 1-13 and requests allowance thereof.

In sum, the Examiner has not provided a valid basis for the new Restriction. The Examiner has not provided reasonable, concrete, examples that recite material differences to the apparatus as claimed. The present Restriction is improper because claim 1 is generic to the scope of material that is called for in claims 14-38.

For at least these reasons, Applicant respectfully requests that the Restriction be withdrawn. Accordingly, Applicant respectfully requests rejoinder of claims 1-38 and allowance thereof.

Applicant believes no fee is due for filing the Petition. However, should a fee be deemed necessary, Applicant hereby authorizes charging of Deposit Account No. 07-0845.

Respectfully submitted,

/Timothy J. Ziolkowski/

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Date: September 11, 2006

/Robyn L. Templin/
Signature

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**PETITION UNDER 37 C.F.R. §1.144 SEEKING
SUPERVISORY REVIEW OF RESTRICTION REQUIREMENT AND
RESPONSE TO AUGUST 23, 2006 EX PARTE QUAYLE ACTION**

Dear Sir:

This Response is being filed responsive to the August 23, 2006 Office Action issued as an Ex parte Quayle Action and as a request and reaffirmation of Applicant's original Petition filed June 5, 2006, consideration of which is hereby renewed.

Docketed by: SM

Date: 9/12/06

Polzin, Jason A.

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REMARKS

In the August 23, 0026 Office Action, the Examiner noted Applicant's Petition filed June 5, 2006 Seeking Supervisory Review and stated that the "Petition however, was premature as the elected claims had not been disposed of at the time of filing." The undersigned placed a call to the Examiner to inquire as to the Examiner's authority to (A) unilaterally dispose of the Applicant's "Petition Seeking Supervisory Review", and (B) authority for the proposition that such a Petition is premature unless the elected claims are disposed of. At the time of filing this Response, the undersigned did not receive a return call from the Examiner.

Accordingly, Applicant seeks review of (A) the Examiner's authority to dispose of the Applicant's Petition Seeking Supervisory Review, and (B) authority for the proposition that such a Petition is premature until the elected claims are disposed of.

It is noted that in the Office Action of April 4, 2006, the Examiner specifically stated that the "requirement is still deemed proper and is therefore made Final." Applicant believes its Petition is appropriate and seeks consideration thereof. Attached hereto is a courtesy copy of the Petition which was originally filed June 5, 2006, and is refiled concurrently herewith. Applicant believes that the Examiner did not have authority to interfere with the Petition Seeking Supervisory Review, nor is there any requirement that claims need be finally disposed of prior to filing a Petition for Review.

Applicant respectfully requests Supervisory Review, and ultimately, rejoinder of all pending claims for the reasons set forth in the Petition. Additionally, Applicant believes that the issuance of an Ex parte Quayle Action was premature since Applicant's Petition has not been considered and claims 14-38 are still pending in the present application.

Applicant believes no fee is due for filing the Petition. However, should a fee be deemed necessary, Applicant hereby authorizes charging of Deposit Account No. 07-0845.

Respectfully submitted,

/Timothy J. Ziolkowski/

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**PETITION UNDER 37 C.F.R. §1.144 SEEKING
SUPERVISORY REVIEW OF RESTRICTION REQUIREMENT**

Dear Sir:

Responsive to the Restriction Requirement made Final April 4, 2006, Applicant requests Supervisory Review and consideration of the following remarks in support of the rejoinder of claims 14-38 with claims 1-13.

Polzin, Jason A.

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JAN 03 2007**REMARKS**

In the Office Action mailed February 6, 2006, the Examiner identified three alleged "species" in the pending application. The Examiner classified "the species of Group A consisting of the embodiment as described in paragraph 13 of the specification, Group B consisting of the embodiment as described in paragraph 14 of the specification, and Group C consisting of the embodiment as described in paragraph 15 of the specification." The Examiner required Applicant to elect a single species for prosecution on the merits.

In a timely response mailed March 8, 2006, Applicant elected, with traverse, what the Examiner characterized as species A. Despite Applicant's arguments, the Examiner made the Restriction final, and withdrew claims 14-38 from consideration in the Office Action mailed April 4, 2006.

In the original Restriction of February 6, 2006 the Examiner made no arguments in support of the statement that the claims were patentably distinct species. Instead, the Examiner merely stated that claims directed to patently distinct species were "a) the embodiment as described in paragraph 13 of the specification; b) the embodiment as described in paragraph 14 of the specification; and c) the embodiment as described in paragraph 15 of the specification."

Responsive thereto, Applicant argued that the Examiner has not identified any "species" and the subject matter of each paragraph identified by the Examiner corresponds to a respective independent claim. That is, the Examiner identified Group A and cited paragraph 13 as illustrating such. Similarly, with respect to Group B, the Examiner cited paragraph 14 in support of the identification of species. Additionally, with respect to Group C, the Examiner cited paragraph 15 in support of the identification of species. The Examiner simply attempted to identify species based on claim elements of the independent claims. Applicant further argued that one will readily recognize that the subject matter of paragraph 13 corresponds to the elements of claim 1, the subject matter of paragraph 14 corresponds to the elements of claim 14, and the subject matter of paragraph 15 corresponds to the elements of claim 28. These paragraphs merely summarize the invention as claimed. The identification of alleged species based on claim elements of the independent claims is clearly improper.

Applicant went on to argue that MPEP §806.04(e) clearly sets forth that the Examiner's species restriction is improper because "[c]laims are definitions of inventions" and "[c]laims are never species." MPEP §806.04(e), (emphasis in original). The Examiner attempted to circumvent the rule by citing to portions of the specification—which is nothing more than form over substance when the specification contains paragraphs that merely correspond to independent claims. Therefore, the Examiner effectively attempted to proffer a species election based solely on the claims. *See Id.* The Examiner cannot attempt to identify species based simply on the fact that there are multiple independent claims. The Examiner's attempt to sidestep the requirements of MPEP §806.04(e) is improper, and therefore, the restriction is not

Polzin, Jason A.

S/N: 10/711,603

sustainable. The Examiner did not present any proper grounds for a species restriction and has not provided any support for a species restriction.

In the Response of March 8, 2006, Applicant argued that the restriction must be withdrawn and the claims rejoined. In the Office Action of April 4, 2006, the Examiner responded, stating that Applicant's arguments were:

not found persuasive because applicant's argument that the species have not been identified they somehow, correspond to the claims, is immaterial to the question of the propriety of the restriction requirement. Moreover, MPEP §809.02(a) directs the examiner to identify the species, preferably with figure drawings, or examples. The figure drawings in the instant case, are useless for this purpose, so the specification has been used. Applicant' (sic) should regard as a fortunate coincidence that the correspondence between the claims and the paragraphs of the specification is so close. This means that the species can be clearly identified and the claims readable thereon elected without confusion or discrepancy. The identified species are patentably distinct on their face as they do not have overlapping scope.

The reason that the figures are "useless for this purpose" is that there are no restrictable species. The three paragraphs cited by the Examiner as disclosing distinct "species" of the present invention are found in the Brief Description of the Invention and further illustrated in the Detailed Description of the Preferred Embodiment section of the Specification, each Embodiment allegedly a separate species. However, even a cursory comparison of the cited paragraphs to the three independent claims of the present Application quickly elucidates that the language of paragraphs 13, 14, and 15 is substantially identical to that of one of the three independent claims. More specifically, paragraph 13 (Species A) corresponds to claim 1, paragraph 14 (Species B) corresponds to claim 14, and paragraph 15 (Species C) corresponds to claim 28. Thus, the Examiner has effectively restricted claims as species and has not identified actual embodiments of the alleged species. Section 806.04(e) of the MPEP is very clear in stating that "[c]laims are never species.... Species are always the specifically different embodiments." (Emphasis in original). Therefore, the present restriction attempts to circumvent this mandate by restricting between paragraphs of the Application which are paragraph-form summaries of the independent claims. Such a manner of restriction is improper, unsustainable, and must be withdrawn.

In addition, the Examiner has not clearly identified the "species" and has not stated any characteristics which distinguish between these "species." See MPEP §809.02(a) (the Examiner must "[c]learly identify each... of the disclosed species *to which claims are restricted*. The species are preferably identified as... figures... or... examples") *Id.* Furthermore, in the absence of distinct figures or examples to identify the several species, the mechanical means, the particular material, or other distinguishing characteristic of the species should be stated for each species identified. *Id.* An inspection of the cited claims and the Detailed Description of the Preferred Embodiment reveals that the purported

Polzin, Jason A.

S/N: 10/711,603

"species" are substantially interrelated. Thus, the Examiner could not provide a precise identification of the "species" or explain any distinguishable characteristics as between the cited claims. Instead, the Examiner merely stated that the figure drawings are "useless for this purpose" and that the Applicant should regard as a "fortunate coincidence that the correspondence between claims and the paragraphs is so close."

Applicant submits that it is no "fortunate coincidence" of correspondence between claims and the cited paragraphs. Rather, the paragraphs cited merely summarize the claims. The subject matter of the claims and their corresponding paragraphs do not support patentably distinct "species."

In sum, the Examiner has not provided a valid basis for restriction between Groups A, B, and C. The Examiner has not stated any characteristics which distinguish between these "species." The present restriction is improper since it effectively restricts claims and not embodiments. This failure to identify distinguishable characteristics indicates that the restriction required by the Examiner cannot be substantively supported.

For at least these reasons, Applicant respectfully requests that the restriction be withdrawn. Accordingly, Applicant respectfully requests rejoinder of all claims.

Applicant believes no fee is due for filing the Petition. However, should a fee be deemed necessary, Applicant hereby authorizes charging of Deposit Account No. 07-0845.

Respectfully submitted,

/Timothy J. Ziolkowski/

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Dated: June 5, 2006
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| Examiner | Louis M. Asana | | |
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| Dear Sir, | | | |
| This Response is being filed responsive to the August 23, 2006 Office Action issued as an Ex parte Quayle Action and as a request and confirmation of Applicant's original Position filed June 5, 2006, consideration of which is hereby renewed. | | | |
| PAGE 11/11 * RCVD AT 9/11/2006 5:26:33 PM [Eastern Daylight Time] * SVR:USPTO-EFXXF-3/14 * DNIS:2738300 * CSID:2622688185 * DURATION (mm-ss):03-58 | | | |